both safety analyzers. In this case, the relevant safety analyzers can also carry out different safety-related logic links in addition to the redundant logic links, that is to say those which are carried out on both analyzers.

The invention will be explained in the following text by describing a number of embodiments based on the drawings, in which:

Fig. 1 shows an outline illustration of a first embodiment of the automation system according to the invention, with two safety analyzers in the long-distance bus system,

Fig. 2 shows an outline sketch of a further embodiment of the invention, with a safety analyzer being arranged directly after the interface assembly,

Fig. 3 shows the automation system according to the invention in the form of an outline sketch with a safety analyzer integrated in the interface assembly, and with a second safety analyzer at the head of a bus spur,

Fig. 4 shows an automation system according to the invention with two safety analyzers whose outputs are connected to one another,

Fig. 5 shows an outline block diagram illustration of a safety analyzer with various inputs and outputs, and

Figs. 6a and 6b show an outline illustration of data manipulation on the bus datastream by means of the safety analyzer.

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Fig. 1 shows an outline illustration of the automation system 1 according to the invention, that is to say a control and data transmission system according to the invention. This has a bus 2 to which I/O bus subscribers with associated sensors and